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THE SOCIAL PROBLEM.¹

THE PROGRAMME which we sketched for resolving the questions propounded in *The Monist* for October 1893, and which were summarised again at the conclusion of the article in *The Monist* for October, 1897, was evidently too vast. We are desirous of hastening to our conclusion. Yet much remains to be examined. The studies leading to the practical goal set by sociology are in reality divided into three parts: (1) The foundation, the preface, so to speak, which is absolutely necessary, and which reposes upon anthropology. We are here concerned with the science of man and of his relations to nature, with the motives of his acts, with his strength and with his weakness. Man is an animal. His animality is the source of all the difficulties in society. It is the enemy which must be combated and which consequently must be exhaustively studied. (2) Sociology proper, which is the history: (*a*) of animal societies; and (*b*) of human societies, of their development, and of the varied and complicated phenomena which they present from their origin to the present day. (3) Social science, the chapter to which we are now come, and which, in its highest domains especially, is the application of the truths discovered in the preceding parts, to the needs of modern societies.

The apparent or real contradiction between nature, the individual, and society, between the social evolution such as it actually is and the social evolution such as we should like it to be, between the ends of nature and the ends of society,—such is the main problem which we are called on to elucidate. The misunder-

¹ Translated from Professor Topinard's MS. by T. J. McCormack.

ings which obtrude themselves into the solution of the questions here set, arise wholly from the confounding of the following three points of view,—nature, the individual, and society. Thinkers start in their reasonings from nature and draw conclusions as to the individual: or, they begin with the individual and draw their conclusions as to society; or *vice versa*. The prime requisite is clearly to separate these three points of view,—which we shall now endeavor to do at the risk of slight repetitions, perhaps.

NATURE.

The universe is summed up for man in two words: the ego and the non-ego; the centre and the circumference. The ego knows the non-ego by the images it receives from it; it observes their differences and resemblances, fixes and classifies their relations, and gradually rises from particular considerations to more general views. These relations, these views, are ideas, which may be distinguished into positive and negative, particular and general. Among general negative ideas are the concepts of infinity, of nullity, of a beginning from nothing, of an end leaving nothing. Among general positive ideas are the concepts of succession or of time, as in the cinometograph; the concepts of parallelism or space, arising from the impossibility of conceiving two things to occupy the same place at the same moment; the concepts of continuity and intermission, of causality or independence, etc. Ideas may be further distinguished into relatively direct and relatively indirect ideas. The latter are the product of induction or of imagination. The ideas of absolute welfare, of absolute good, of absolute beauty, are comprised in the last category. They are concatenate ideas, conceived at their maximum of expression in a type which the mind represents to itself. Absolute good, welfare, and beauty are not realities, but the conception of an ideal, of a *ne plus ultra*, along a certain path. The union of the thrée is absolute perfection, perfect harmony in the whole, a complete adaptation of things to one another, the reaching of the objective goal conceived by the subjective mind, of the non-ego by the ego.

The last utterance of positive and inductive knowledge, as

given by the present state of science, may be summed up as follows. Matter and energy are always associated, and, under infinitely varied forms, are eternal. These forms are in a perpetual state of mutation. Rest is but a transitory appearance; change is the life of the universe. Matter composes all bodies,—solid, liquid, gaseous, or what not; energy engenders all phenomena. The commonest form of energy is attraction, which by two different processes gives rise either to motion or to molecular cohesion. In new aggregations adaptation to existing things is the first law. The formations or mutations are effected in all directions according to the solicitations and resistances; but judging from the portion of the universe of which we form part, and in its existing phase, one general direction predominates in them,—a direction from the simple to the complex, from the similar or non-differentiated to the dissimilar or differentiated, from the unstable or non-adapted to the stable or adapted. This general direction in time and space is what is called evolution.

Evolution, although single in your eyes, is yet, for purposes of study, divided into as many particular evolutions as there are separate subjects to be considered. Such is the evolution of our solar system, of which our planet is but a fragment, the evolution of life on the surface of our planet, the evolution of the ego and of thought in the animal series, the evolution of human societies. The beginning and the end are the critical problems of the two first. How, in the initial star-dust, were the first combinations of the mobile atoms, which were originally alike and independent, effected? And how through them was the first centre of general attraction created? How on our planet was the first granule of protoplasm formed? The end, so far as we are concerned, we know. Our earth will cease to be habitable. It will grow cold again, will doubtless lose its atmosphere, its humidity, and will resemble our present moon. Evolution, from having been progressive, will become stationary, then regressive. Some day, as Huxley has asserted, the lichens, the diatoms, the *Protococcus*, will be the only living beings adapted to the conditions of life, and finally there will be nothing. As for our sun, when it shall have exhausted its present store of fuel, when

it shall have become inhabitable and shall have had its ascending and descending evolutions, and possibly also its human phase, it too in its turn will become a dead star lost in space, and other systems will begin and will shine for a period, to end as the others have ended. And to what purpose is it all? Our imagination, our reason, can they conceive of anything which does not remove, postpone the difficulty without solving it? One need but read pages 446-448 of the French edition of Guyau's *Irreligion of the Future* to learn what even the most seductive conceptions lose when we seek to support them by speculations regarding the inaccessible in the present state of science. The wisest course is to confess humbly our inadequacy and to take refuge in the agnosticism of Huxley.

The factors of organic evolution on the surface of our planet, as we have already stated in *The Monist* of October, 1895, page 46, are as follows: (1) the spontaneous expansion of life, or the augmentation of the matter which is its seat at the expense of other matter received from without and assimilated, up to the point where the separation of a part of the mass is effected,—by which act results the creation of other individuals; (2) the spontaneous variation of individuals so created,—the first cause of the differentiations and multiplications of living forms; (3) the adaptation and increase of those of these variations which are utilised and suit with the conditions of existence,—the second cause of differentiations and particularly of their establishment. Heredity, or resemblance by continuity of individuals, and the survival of the forms best adapted to the circumstances, are but consequences. The expansion of life is effected in all directions, where no resistance is made. A fragment of *Lemna* thrown upon the surface of a pond sends forth its branches on all sides and ends by invading the whole pool. Variations likewise are effected in all directions. The utilisation and adaptation of these variations alone determine the directions which the forms take under the influence of circumstances, such as accident gives rise to, marshals and renders efficacious. At times these circumstances come into conflict with one another, at times they confirm one another. They accelerate, retard, or arrest progress in the path followed, up to the point where they change it, turn it

aside, pull it backwards, or cause it to describe a zigzag course. They give birth to types which are marvellously successful, but more frequently perhaps to imperfect, faulty, aberrant, partly non-viable, types which respond to the need of a day but not to the general needs. Such, for example, to cite only mammals, is the type of the sloth, condemned by his unfortunate organisation to a passive existence, from which he cannot wrest himself; the type of the great animals which became extinct in the Jurassic epoch; and even the type of our elephant of to-day, which requires such great quantities of nourishment that it is surprising that it is still existent. There are admirable linear series such as that of the Primates, where advance follows in harmony with reason, and which sooner or later must give good results. But there are also series which have been hoodwinked, so to speak, which have been thrown off the track,—series which can never lead to anything, which have ended in a *cul de sac*. Thus the high-road of evolution is strewn with victims, with imperfect beginnings, with species incapable of persisting, with misfits. Still, since in this hecatomb the fit survive, and the unfit succumb, the general result, in the present state of things, is what is called progress.

In sum, the evolution of life upon our planet is neither an entity, a cause, nor a force, but a series of effects, the result of an incessant struggle between the expansion of life and the conditions which confront it. Life expands blindly, capriciously, without plan or design, as circumstances shape its course. In this evolution two things are to be distinguished: a general direction towards improvement in the general conditions which we now know; and possible particular directions, having greater or less duration. The latter are good or bad according to the particular species concerned, and it may even involve advantage for a given species to resist the natural evolution and when possible even to direct its course.

We have seen, in fact, that the various species at the various epochs in which we have considered them,—the Jurassic, the Eocene, the Pliocene, and the present,—are comparable to the terminal efflorescences of a tree of which the dead branches and trunk have disappeared; and that through subsequent flowering these

efflorescences are replaced by others ; that, in a word, the common law of all species, both good and bad, is death. Among the mammals, very few species have perpetuated themselves through several ages. Does not the conclusion suggest itself that if some one of them by some exception possesses some peculiar quality which enables it to shape in some measure its destiny, and to secure for itself in some measure its own happiness, it is reasonable that it should make full use of that quality. It is a positive fact that Nature has no concern for the numerous species to which she has given birth, no more than the tree has for the leaves which turn yellow and sear every autumn, and fall to the ground. Nature, like evolution which is but the result of its mutations, is not a personality. It has neither feeling nor reason ; it has neither the notion of the good nor of the beautiful. Whether a species is good or bad, whether it is adapted or not to its environment, whether ten, twenty, or one hundred die before a good one is reached is a matter of indifference to her. Nature is a state of things merely, a series of changes, a wheel which turns perpetually, a world inhabited or uninhabited which rolls through space. If man is more favored than other species he has to thank himself alone for it. He may erect altars to Nature and invoke her aid, but she will abate not one jot or tittle of her onward movement. If he would escape the common fate, if he would ameliorate his condition, be happy, let him make her his servant, reign over her so far as he can ; but let him place his trust in no one but himself.

THE INDIVIDUAL.

The species is merely a definite number of individuals, which have sprung one from another, which have been separated since their birth, and are independent. Among the vertebrates some forget their parents, others abandon them as soon as they can, and preserve no remembrance of them. The individual, in fine, is the real and tangible thing, the only thing in living nature which joins psychical attributes to physical attributes, the only thing which, while subject to the laws of nature, bears within itself some spontaneity of its own, if not a relative autonomy; the thing in which all

life, all organic evolution is materialised, and which is at once the beginning, the middle, and the end ; the thing which is born, which grows, dies, and propagates itself, leaving behind it new individuals, always distinct and independent. It is the individual which varies, works, and is transformed by insensible degrees, donning the infinite forms which people our planet and which the naturalists divide into species, families, orders, etc. Alone of all the bodies of the universe it knows the objects which surround it and concern it, the movements it executes, and is cognisant that it exists ; it alone rises in the front of and in defiance of Nature and reversing positions makes itself its centre ; it alone in a certain epoch of its development possesses a centralised ego which thinks and reasons.

Upon this characteristic ego, depend, directly or indirectly, all the acts of the individual which lay a claim to our attention. It is doubtful, as we have shown, whether it exists among the Protista. There are as many particular egos among the lower composite animals as there are parts in connexion with its special division of labor. Among animals not so low in the scale, certain of these egos become confluent, and one of these confluences attains supremacy. Among the vertebrates they are centralised in a special organ.

The central ego does not intervene in all circumstances, but only after an intermittent and facultative fashion. It abandons to the spinal chord the ordinary acts, which the organism has contracted as habits, and enters into play occasionally only, to modify those acts according to the special requirements of the needs of the individual of which it has the administration. In the reptile, the vulture, the marmot, these needs are limited to eating, drinking, sleeping, keeping warm, satisfying the instincts of reproduction, avoiding danger, and acting in self-defence. Their foresight is minimal, frequently zero ; the individual thinks of the present, at most of the morrow, or of the winter to follow. Memory is limited, reflexion is directed only to the immediate effects of acts ; habits or instincts predominate over everything ; the ego intervenes but little. In some of the higher mammals, as the elephant, the monkey, the domestic cat, the picture begins to change. The faculty of ob-

servation, memory, reflexion, foresight, increase; the rôle of the ego becomes more pronounced; it interferes more.

In man, especially in our days, the picture is totally different. His needs have infinitely increased, the necessities of life no longer suffice him, he reaches out for the superfluous, for the comforts of life, and for the pleasures of the intellect. He has ungovernable desires, passions of all kinds; he pursues various ideals. The motives of his resolves are numerous; he has many various ways of yielding to them; he carefully foresees the effects of his conduct. His ego has unceasing opportunities for intervening, for deliberating, and for taking the initiative. Its task is so great even that it would be unequal to it, did not its powerful memory enable it to store up the results of its former deliberations, did it not suppress part of the reasonings through which it has passed, did it not progressively simplify its procedures, did it not establish in itself habits of feeling, thinking, and reacting which greatly diminish its labor. Let us dwell upon this capital point.

The exterior acts of man are of two kinds: the one voluntary and attended by the premeditated and deliberate intervention of the ego; the other more or less unconscious and unattended by that intervention. The latter acts are the results of habits contracted by the individual himself, or bequeathed to him by his ancestors in the form of predispositions more or less susceptible of inducing the same habits under the influence of the right kind of excitations. The ancestral habits, confirmed and consolidated by their repetition from generation to generation, are instincts or instinctive acts. The individual habits, sometimes just as powerful, are of the same character, have the same mechanism, and deserve on the same ground to be called instinctive acts. The following are examples: swimming, following mechanically a path which is daily pursued, drawing one's sword and placing oneself on guard in the presence of an enemy, jumping into the water, without reflecting, to save a fellow-being, copying a page of handwriting while thinking of something else, speaking without knowing what one is saying, etc.

Instinctive acts when totally unconscious have their seat in the spinal chord. A peripheral excitation reaches that organ and is

there transformed into a co-ordinate, reflex movement, the movement which the excitation in question habitually engenders. The excitation extends also to the brain, but that organ is indifferent to it, does not focus its attention upon it, and suffers the movement to be accomplished without its intervention. Nevertheless, the excitation may be perceived, may awaken in the brain analogous anterior sensations which have been stored there, corresponding ideas and motor reactions which are habitually disengaged without the ego's interference or opposition. This is what I call a cerebral reflex act, whereas the preceding case was a medullary reflex act. It goes without saying that the habits contracted, whether ancestral or individual dominate the whole phenomenon. The nervous circuit having been traversed, the response given will conform to the habitual mode of feeling, thinking, and acting, as influenced by said excitation. The ego assists more or less consciously but performs no act of will, or at least executes but a very secondary and feeble sort of volition. Such is the case of the soldier who, transported by his courage, rushes into the face of the most certain danger, or that of a friend into whose arms, yielding to your first impulse, you throw yourself, although he has betrayed you and done you injury. Such are the impulses more or less unconscious, which impel us to commit acts which are frequently in perfect disaccord with our interests, although in accordance it may be with what Kant calls the categorical imperative.

The really voluntary acts are those in which the excitation is the object of serious attention, in which the response is deliberate, its immediate and remote results carefully weighed, the various motives *pro* and *con* collated and compared. Nevertheless, there is constantly heavy pressure brought to bear upon the will, from which the ego has great difficulty in extricating itself. The varying forms of sensibility and faculties which intervene in every intellectual operation are what heredity and personal education have made them. At first the ego perceives, judges, and acts impulsively along the lines in which its ancestral substance swings it. Then it is influenced by the modifications which it has experienced during its life and notably during its infancy, the time when its brain was growing

and absorbed readily everything that was offered to it. It has been moulded by its family, by its first comrades, by its first impressions, by the results of its first acts, by the examples which have been set it, the events of its age, by the success or non-success of its conflicts with society. It believes in what has been taught it and in what it has reached itself by its own observations and meditations. A mode of thought is formed, favorite ideas are acquired of which it is never the master and which control it. It has a lively or obtuse sensibility for some things, and none at all for others. It has an optimistic or pessimistic temperament, it is idealistic or free-thinking. Besides, the ego is subject to general or accidental dispositions, both of brain and of body. A sound brain in a sound body is the first condition of liberty, just as sufficient preparation for the subject under deliberation is the first condition of good judgment. The volitions of the ego are thus a very complicated resultant of numerous and variable circumstances, both internal and external. The ego does not estimate things by the same standard in its tenth, twentieth, thirtieth, and sixtieth year, in the spring and in the autumn, in the evening and in the morning. Nor is its judgment the same with a peasant whose horizon is limited and with the metropolitan whose views are broad, with the proletarian who has suffered and with the rich man who is saturated with indulgence, with the ignorant, the man of letters, and the scholar.

Yet there is one thing that is common to all men,—an ego entrusted with judging what is good, useful, and agreeable for the individual, with making its decisions conformably to its interest, with foreseeing the harmful or advantageous effects of its acts,—in a word, with presiding over the conservation and prosperity of particular individual of which it has the charge. Medullary and cerebral habits enable the ego to restrict its activity in the generality of exterior acts to a mere Platonic surveillance. But as soon as new circumstances throw the least doubt upon the utilitarian character of the habits, its duty is marked out for it, it is bound to intervene, to throw aside all sentimentality, to array itself in the armor of reason, to appeal to its entire experience, to summon all the

light at its command, and to render its decisions in the fullest plenitude of its independence for the best interests of its client.

From these considerations it follows that, setting aside reflex acts which are purely medullary and holding only to acts which are cerebral in their origin and to their species of determinism, three types of ego may be distinguished. The first, which is *par excellence* physiological and which goes back to the very origin of the species, is possessed by man in common with all animals; it has charge of the defence of the individual, and can be inspired for no object but its best welfare. The second is the result of habits acquired by ancestors and transmitted to the individual. The third is the product, in the individual himself, of the circumstances in which he lives, of education, of private habits accidentally or forcibly acquired, of surrounding passions, etc. These two last egos, which are more or less automatic, may be comprised under a single designation, which we shall give later. The first is the animal ego, but active and reasoning; on this we shall dwell exclusively now, reverting later to the two others.

Let us put ourselves in the point of view of the individual who possesses it. "I have a limited time to live upon this planet," he will say to himself; "of the beyond I am ignorant, or rather I know it only too well; the thing is to steer my bark as skilfully as I can and to be happy; not to suffer myself to become a prey to illusions or to be over-powered by sentiment when no profit can be expected from it; not to accept as the truth what reason has demonstrated to be false; to see things as they are; in a word, never to commit, from routine and naïveté, acts whose outcome will not correspond with my intentions. My body, my health, my physical and psychical satisfactions, the sufferings that are to be avoided—such are the things I have to consider. The non-ego has value only through and because of the good which it can bestow upon me, because of the profit which I draw from it, of the happiness which it procures for me. I have had experience with men; I know that if some are good the majority are selfish, are not prone to give something for nothing, and have a solicitude for me only in so far as they believe I can be of service to them. The first thing is to wrest from the

world my independence, not to have need of any one, and to create for myself a safe and enviable position. The esteem in which people shall hold me, the number of my friends, my credit, my power, will be proportional to that independence and that position. The less that I have need of others, and the more that they have need of me, the more will I be sought after. What I love most of all in the world I must confess is myself. Next come my wife and my children. I love them, protect them, because they belong to me, because they do me honor, and because they render back to me the affection which I render them, and because they will have to take care of me in their turn when I have grown sick or aged. So true is this, that if they do not give me the satisfaction which I expect from them, that if they cause me more sorrow than happiness, I shall stifle my sentiments, cast them aside, arrange my life differently, and disinherit them. I love my neighbor because I am rewarded in some way by him ; he listens to me, he comprehends me, his conversation is agreeable to me, he is indulgent to me. I am willing even to make certain sacrifices for him on condition that I do not run too great a risk myself. I love the country and society in which I have been born, because they procure for me numerous advantages, although I am quite capable of infringing its laws when they annoy me and when their non-observance will bring on me no inconvenience or penalty. I shall be honest for numerous motives, one of them being because I wish others to be honest with me. I shall be charitable if I am rewarded for it by public opinion and if my sacrifice does not exceed the pleasure I can derive from it. I shall profess the most exalted and most generous principles: stoicism, justice, liberty, solidarity, equality for all ; first, because I myself am included among the "all" ; then because this may just happen to be my favorite idea or a useful thesis ; in a word, I shall make it a point to have incarnate in myself all these virtues for the reason that they are to my best interest. As to going to the bottom of my conscience, as to analysing my motives in all cases, that is all very well but it is useless. I prefer to have a high opinion of myself and to be convinced that I am good and disinterested.

Of what use would it be to confess to myself a truth which would lower me to the level of the animal."

The picture is a gloomy one but it is only too true. Egoism is the essence of the animal ego which we are describing ; altruism itself is but egoism disguised (see *The Monist*, July, 1896, p. 552). When the two confront each other, when the other types of ego of which we shall speak are silent, and when the cerebral balance is exact, brute egoism will always carry the day. Suppose two individuals upon the ocean in a vessel. No hope, not a sail on the horizon, with enough to eat for one only ; they are dying ; the two egos face each other, both eager to live ; the one will slay the other. From this extreme case to the lowest case of simple distinction of good and evil, all the intermediary stages are met with. And yet the animal ego is neither good nor bad in the nature of things. If it were not for the difficulty of obtaining a livelihood, for the competition and strife which results therefrom, its sensibility would carry the day, and it would be nothing less than kind. In reality, by virtue of his reason man is utilitarian. The more intelligent and enlightened he is, and the more rigorously he adapts his acts to the objective reality of things, the more "practical" will he be, as it is called in the language of the day.

SOCIETY.

Society differs from the individual, as much as the individual does from nature, but in a different direction. The following is the order of gradation: the universe which is the totality of the stellar systems including our own ; organised nature which we know of only on our planet ; the human individual which is the highest form of organised nature ; society which is a mode of life that new conditions have rendered obligatory for the individual. Man has domesticated animals, has invented flint instruments, navigation, agriculture, exchange. Pressed by the same necessity, he has invented society, that is to say, adaptation to his needs for companionship, which hitherto were less urgent, and he has gradually made of it a sort of permanent personality, taking the place of the real but transitory personalities. The following is its evolution.

Among animals the assemblages were at first indifferent, as we have seen, and were formed by imitation among individuals having no motive for hostility. Habit resulted, then a sort of pleasure, finally reciprocal altruism. The individuals constituting the group lived under the same roof for warmth, they formed serried bodies for resisting attacks, they hunted in concert, and assisted one another variously. The weak sought out the strong, the strong protected the weak and naturally became the chiefs. The highest stage reached is represented by the instance of strategy among monkeys which we narrated after Romanes, and by the cases where sentinels have been punished for neglect of duty, or where judgment has been passed by a sort of tribunal.

In man the same two phases recur. The first is spontaneous or altruistic; the second reflective and based upon interest. A special reason is added in the first phase: with man the young remain longer with their parents and continue willingly with the family, which by favoring the maintenance of altruistic sentiments becomes the nucleus of a subsequent society. But man, owing to his intelligence, cannot in the second phase help discerning more and more the advantages resulting from life in common and is forced to go further. Thus defence against enemies with him rapidly takes on a special physiognomy; collective defence becomes collective attack; the passions, the love of domination and glory, mingle with the rest, and the curse of militarism spreads on all hands. Yet within, every one still remains for a long time the master of his acts, and shapes as he pleases his relations to his fellow-men. Customs become established of themselves for each case. But the day arrives when the differences threaten to spread and to compromise the security of all. The general interest requires intervention. Then arbitration is invented, compensation for all kinds of crimes, punishments, prohibitions, etc. Customs become rules, and then laws, the great number of which grows as the population and the complexity of the mutual relations grow.

But in these societies, subsequently to the naïve and patriarchal phase of the fathers and the elders, came a second period, where the more adroit and the more ambitious assumed the task of

controlling the general interests, while the others kept to their ordinary occupations. Thenceforth free reign was given to individualism, which is inseparable from human nature. In the hands of the conductors and administrators the general interest was subordinated to particular interests, society became their special property, and was mismanaged to their profit. Hand in hand with this, as a result of the division of labor and of the transmission of the consequences of the struggle of each for existence, society was divided into groups, for the most part professional, in which individuals, from father to son, became immobilised,—one class reputed noble and filling the highest offices of society, the warriors, the priests, the magistrates; the other reputed inferior, if not servile, the farmers, the merchants, and the laborers. Other groups were added; the strangers, who were admitted into the social group without sharing its advantages, and the conquered who were made slaves. Thus social classes became established,—the negation of the principle of equality of the advantages to be derived from a social state, which from the beginning was necessarily the tacit condition of every system of life in common. The internal social evil which resulted therefrom, and the external evil, the militarism which we have opposed to it, have thus totally falsified society. The initial object was the happiness of all, and greater facility in subserving their needs, each entirely responsible for his acts but enjoying the fullest play for his faculties and the external means for investing them with equal value for all. This result was obtained only for a part of society, the least part, the strong and the intelligent. The others, that is to say, the immense majority, not only gained nothing, but were placed in a condition inferior to that in which they existed in the state of nature. Society is but a hierarchic scale: at one extremity are the privileged by birth, entering into full and immediate possession of all the honors, of all the enjoyments, without having done anything to gain them. At the other extremity are the pariahs who inherit nothing but the misery and the sufferings of their ancestors, and lack the possession of the meagrest arms for struggling, predestined to defeat before having

engaged in the struggle, condemned, they and their children, to the hardest possible fate, often without hope of termination.

At its origin society looked to nothing but the present. When the enemy attacked, all seized arms; and when the combat was done, they returned to their customary occupations. But little by little the levying of the population *en masse*, the successes collectively gained, the treaties concluded for long periods of time, the necessity of extending territory which had grown insufficient for the population, gave rise to a vague sentiment of solidarity of interests, which extended beyond the present moment. The rules adopted for the relations existing between individuals were in themselves an indication of foresight, being as much concerned with children born and to be born as with the present existing generation. The council was a permanent institution, of which new members were chosen when vacancies occurred by death; sometimes the office of chief was hereditary. A tradition was thus constituted. The memory of the past, ancestors held in universal veneration, household gods, the annual ceremonies invoking these objects of worship, solidified the bond. The collective qualities of a tribe, its reputation, its prosperity, all its belongings, formed a patrimony which all took pride in transmitting intact and when possible augmented. Every society which had achieved something became thus a state,—a corporation possessing a genuine capital at once physical, intellectual, and moral, which was increased from generation to generation by many successive acquisitions,—a continuous fictitious personality exerting its authority over real personalities and having no compunctions against sacrificing them to its interests. Such were the ancient municipalities where defence and attack formed the pivotal interests. Such are our modern nationalities,—a guardianship which is not infrequently irksome; a mechanism of the most complex kind; a scientific concentration of all powers.

The strangest thing is that these personalities in their relations with other societies have taken on the habits, adopted the modes of thought and action of a real individual, and that like the latter they seem to be in possession of two egos: one reflecting the tradi-

tion and distinctive character of the nation (altruistic, let us say); the other sociocentric, egoistic, and given absolutely to its own interests,—with this difference, that in diplomatic science the first-mentioned ego is looked upon in the light of a weakness and a sacrifice of self, whilst the second becomes a force, a proof of capacity, a superiority. In international affairs nations who are actuated by sentiment, who base their conduct upon principles and appeal to maxims of duty and humanity, are called chivalrous, whilst those who pursue the policy of results only, and who keep steadily in view their interests, are regarded as utilitarian. If any additional argument were needed for demonstrating that individualism is a synonym for interest and egoism, our powerful modern civilisations would furnish it. Cleverness is the means, our great battalions the sanction. Public opinion is shrewdly respected, because the press supports it, and because at certain crises there is need of it, to say nothing of the occasions when credit is necessary. To divide in order to rule, to reach one's ends even by underground practices provided appearances are preserved, to bend before the strong, to abuse the weak, whether savage or civilised, to succeed without arousing coalitions, such is the international ethics of to-day, as it was in the time of the Prince of Machiavelli. What is there more odious than the so-called "reason of state" (necessary withal), which authorises everything, and which at the moment that I am writing in France causes the same act to be designated on one side of the frontier as patriotism and devotion to country, and on the other as rank infamy. What can be more lamentable than societies all in arms, ready to throw themselves at each other's throats and to sacrifice thousands and thousands of individuals who are not responsible for the causes of the wars waged. If the animal nature is always present in the individual, it is much more so, though under more polite and refined forms, in international politics.

Yet let us not fail to observe that there has been progress. Treaties are no longer broken with the same facility; they have been invested with more form; the favorable moment is awaited. Contracts, comparable to those of gamesters or of operators at the

stock exchange, are now generally kept with faith because answering to a common need. The ordinary conventions which concern international law, and general conventions, such as those which make certain countries, certain water-ways and isthmuses neutral, are constantly gaining ground; arbitration is becoming more common, and strenuous efforts are constantly made to avoid recourse to the *ultima ratio*. Some day there will doubtless be permanent international tribunals for settling disputes between societies, the same as there are now for adjusting differences between individuals; but that day is still remote. A society forming part of a vast federation of this kind will always preserve toward the federal union the same attitude that the individual within it now maintains towards society. Society has its sanction in the punishments which it inflicts. Will the federation of societies we speak of in the future be capable of resorting to the same expedient?

This progressive transformation of a simple and naïve society, given to seeking the best mode of life in new conditions, to extending mutual aid and to realising general happiness, into a complex social stock company, giving good dividends from the high point of view which we shall speak of soon, but distributing its profits and its losses among its stockholders in a most unequal fashion, giving to the one class the favors and the facilities of existence, and to the other the burdens and all the irksome inferiority—is this the end and ideal to be reached? Man has outstripped the animal; he has marvellously developed the system of life in common. But as regards the real object to be gained, he has ended in bankruptcy. We have seen that evolution in living beings makes ultimately in the general direction of the adaptation of the best individuals forming a species to the external conditions in which they are called to live; but that before arriving there evolution strays off frequently into useless and regrettable paths. Such has been the case of man considered from his own subjective point of view. If the evolution of human societies is ever to attain the desired goal we must say that the day is still far distant and that the by-path into which empiricism has conducted it deserves the qualification of

deplorable, whatever passionate admirers of the *laissez-faire* theory may think of it.

But how has this unfortunate deviation been brought about? Why has empiricism, the servant of circumstances, ever led to such a result? It is because nature does not hold the same views as we do, or rather, because it holds none whatever, because it proceeds blindly with its fatal laws, and takes no heed of our opinions or of our desires. It is because the best for nature is not the best for us; it is because man, in order to attain what he desired, ought to have changed himself and transformed his animal nature. At the outset, society conformed to the individual, but this did not last long. The reaction of individuals, one upon another, grew stronger. Some struck and cut about them at pleasure, the necessary relations were falsified; everything was embroiled. Society became a thing apart, an assemblage of conditions which were quite different from what they were at the start, a milieu *sui generis*. But the evil was too deep-seated, the adaptation was not effected. Man has preserved his animal nature, which remains in conflict with his environment. Society and the individual have become antagonistic; what the one demands does not suit the purposes of the other. Social life is a composite of sacrifices often imposed without compensation and greatly exaggerated; the individual desires to be free and fully responsible for his acts. Man is an integral part of nature and is subject to its imperative laws; society is an edifice constructed upon the sand of conventional materials.

This leads us to speak of some of the principles upon which it reposes. These principles will complete our parallel of the three points of view: nature, the individual, and society. For the present we shall reduce them to four: liberty, and its counterpart solidarity; equality, and its corollary justice.

Liberty.

Liberty is a human conception involving volition. Liberty does not exist in nature where there is never spontaneity but only effects, determined by one or several causes acting in different directions and counteracted by others acting in contrary directions. The

strongest or the resultant carries the day. In plants and animals all phenomena are the consequence of organisation, actuated by exterior or interior agents. So-called acts of will are the results of excitations, which bring into play ancestral and personal habits and the moods of the moment, as we have termed them. The same is true of thought, save that here the excitation is sometimes internal and so bears the appearance of spontaneity. Psychological freedom is relative and depends on the ego. This being understood, the individual in the state of nature enjoys all the freedom his organisation allows. He is restricted in his acts only by material obstacles, his muscular and nervous strength, and his own judgment of his motives for acting in given cases. In the presence of one of his fellow-beings he behaves as in the presence of an animal whom he desires to conciliate or to combat. According as his relations with his fellow-beings grow more extensive, he learns to restrain himself, but only under pressure of force or for some analogous reason. In society he is subject to necessity which places upon his primitive instincts of liberty restrictions which he cannot escape.

To describe (1) the province in which the individual is permitted to move about with perfect liberty, and (2) that remaining province where such movement is forbidden; to describe that which is his and that which is others',—two words have arisen in modern society, *rights* and *duties*. Neither the one nor the other exists in the state of nature. There man does what he wants to and what he can. He has duties towards himself only, and they are of the physiological order. The inalienable rights of the French Revolution are rights that are considered indispensable to the existence of man, and of which he cannot be deprived. They answer to what Thiers has called "necessary liberties." Yet it is admitted that in case of war, or the suspension of social laws, they may be temporarily suppressed. Duties are the correlatives of rights, being the obligation to respect in others what we would have them respect in us. They are embodied in the laws and may be summed up in the phrase "obedience to the laws." They are absolute, and their infraction entails punishment. By their side there are other duties having no direct sanction, being prescribed by custom, pub-

lic opinion, self-respect, veneration for family and ancestors. It is needless in social practice to speak of rights. The individual is only too much disposed to broaden their conception. On the other hand, there is a constant necessity of speaking of duties, which are the momentous point and form the very essence of life in common.

Solidarity.

Solidarity is a physical, functional, or psychical bond between parts. It is extremely widespread in nature. Every body is an assemblage of molecules solidarised by cohesion. In a stone heat, humidity, shocks are propagated from one grain to another; if we separate a grain its solidarity ceases. In organised beings solidarity gives rise to colonies of merids, zoids, demes. In the first stage, cohesion pure and simple is the cause. Take the simplest aggregate of cells. Each cell has its own life and forms a distinct individual, but being joined to its neighbors it is solidarised with them to a certain extent. If one be separated, it continues to live but is independent. In the higher stages the solidarity becomes functional. Each part is specialised, is entrusted with some given function, which it performs to the profit of all the other parts of the colony, just as in its turn it profits from the functions which they perform. In the last stage when the solidarity is complete, all the functional individualities are merged into a single individuality. There is unity.

For the free individual in the midst of a vertebrate species, for example, the word is meaningless. There is neither cohesion, community, nor subordination of function here. Absolute independence is its characteristic. But a relative or psychical solidarity resulting from sympathies, needs, or common interests may be established. Exchange of service is the first stage. If the exchange is repeated and has grown habitual, if it is premeditated, if something is offered for the general use with a view to deriving profit from it, the solidarity is increased, within set limits. Such is the origin of commercial societies and of all professional associations. Society, so called, is the most advanced stage of solidarity. The sacrifices, the advantages, and the responsibilities are divided. Yet the solidarity

is even here not complete. Every individual has his reservations and will not suffer himself to be stript of all his freedom. The first distinction to be established here is that of a state of war or of peace. In the first case the solidarity is complete as regards all the means or needs of common defence. Every individual is under obligation to all the others without their being under obligation to him, as it is in animal colonies which have perfect solidarity. In the second case it remains psychical and general to the extent that when prosperity or misfortune befalls a whole or a part of the community, accidentally or through the administration of the latter, all bear the consequences of it, whether they be good or bad. Similarly, if a change be made in the laws, all either suffer or profit by it. It is this sort of solidarity that engenders the idea of country; it is none other than that of common interests. Solidarity is an *a posteriori* conception. It has been spontaneously and progressively produced as a consequence of life in common. It differs totally from the physical and physiological order of the animal colonies; it has no other sanction than the interest of the individual on the one hand and the law with its coercive measures on the other.

Equality.

Equality exists in nature, but fortuitously. Here the effect is always equal to the power expended, or to the sum of the powers diminished by the sum of the resistances. But, excepting the case where they counterbalance each other, the power and the resistance are so unequal and so varied that the effects are generally unequal. Two bodies have rarely the same dimension, the same form, the same properties exactly, two individuals the same value. The one will always get the upper hand of the other. Among species as among the individuals of a species, inequality is the rule and is moreover the condition *sine qua non* of evolution. In the most perfectly organised societies equality is merely coterminous with the laws which are common to all. As to the rest it is simply a word, a principle flowing from another principle,—namely, solidarity. But solidarity being purely psychical and restricted according to circumstances, and equality never being complete even in

perfect solidarities—such as those of absolutely unified animal colonies,—therefore equality can make no pretension to being absolute. The foundation of the principle is as follows. Men united in society make equal sacrifices or, more exactly speaking, sacrifices which are regarded as equal, and assume an equal share of the general responsibility. Therefore they must be equally treated and must enjoy equal advantages. But from theory to reality is a far cry. Equality is a magnanimous dream, the cliff on which all endeavors are shattered.

Justice.

There are few words whose signification has varied so much from antiquity to the present day, and so well reflects the customs of the time. In its highest stage it is a pure human conception, which in its most widely accepted meaning is equivalent simply to possessing or receiving what is one's due.

Let us see if there is anything in nature corresponding to this idea. A body rolls through space, enters our atmosphere, becomes incandescent by the friction, and bursts into fragments. A storm arises, the oak is torn out by its roots, the reed bends and straightens again. A wolf pursues a stag who flees, the one to eat, the other not to be eaten; both exert their powers to the utmost; the victorious wolf is recompensed for his perseverance, the stag succumbs through his insufficient powers of respiration. The Tasmanians live happily; the whites invade their island, massacre them, and appropriate their territory. At bottom all these cases are one. Everywhere takes place that which must take place conformably to the conditions and the forces in action. Nature witnesses impassively and indifferently the phenomena of which it is the theatre. The incandescent body, the oak, the stag, the Tasmanians bear down with equal force in its balance. To living bodies as to inert bodies, nothing is due; there is no justice.

Let us now look at the individual and place ourselves at his point of view. He possesses his particular organisation, of which he is not the author, and which it is without his power to relinquish. As Spencer said, "he is subjected to the effects of his own

nature and of the conduct which it involves.”¹ It is due to him, therefore, that his acts should have the consequences which they logically imply, that he should reap what he has sown. Upon this condition only is he responsible. If his ego has been deceived, if he has wrongly judged what it is best to do, if he has suffered habit to produce the act, and has not intervened to modify it, if he was distracted or indolent at the moment, if he has reasoned falsely, he suffers the consequences. But if he has been correct in his forecasts and judgment, the benefits and the profits belong to him. This is the conformity of ends to acts,—organic or physiological justice. In the case of the wolf just mentioned, it was justice that its perseverance was crowned with success, whereas in the case of the stag it was unjust that, having put forth his utmost powers to escape a danger, it was after all devoured. A mother carries her infant during the period of gestation, brings it forth in pain, nurses it, and lavishes her care upon it; it is unjust that she is not recompensed and that the child dies. But the following is a complicated case. Two men struggle with weapons which each has at his disposal. The one has greater courage, the other greater skill. Each have a claim upon recompense, but one of them conquers. Where is the justice? From the point of view of nature there is none, for both have obeyed their organisation. The stronger has conquered the weaker. But from the particular point of view of each, justice has been done for him who, having put forth his utmost powers, has succeeded; and injustice has been done to him who, having achieved the same end, was nevertheless vanquished. Individual justice, therefore, is relative. Yet even in this restricted form it has wide import and applicability, for it engenders personal responsibility, and so becomes the moving cause *par excellence* of all human activity, involving the reward or punishment of acts, and impelling the ego to be ever alert for intervening, for adapting its commands to the circumstances, and for looking to its interests. If there were no such justice sanctioning responsibility, conduct would be without a rudder.

¹ Herbert Spencer. *Data of Ethics. Justice.* 1891.

It may be asked if this responsibility has aught to do with the acts or with the intentions which have inspired the acts. Certainly habits frequently assert themselves without intervention on the part of the ego, but in not interfering it has done wrong and should suffer the consequences. Acts are the only material which lends itself to judgment. Intentions, and the motives from which they spring, cannot be analysed; they form an inextricable labyrinth. The ego and its acts, whatever they be, are solidary and compact.

We have now come to society. Solidarity, as has been said, involves duties on the part of the individual, while reciprocally society has duties which it owes to individuals. Each in its turn is bound to receive its due. Hence social justice,—or the regulations which control and sanction the relations between the two transacting parties. It is a necessity, at once theoretical and practical, for the perfect functioning of these relations, just as above individual justice assured the perfect functioning of the relations between acts and their effects. It renders the individual responsible to society and society responsible to the individual. It is the sanction of the two responsibilities.

But we have seen that theoretically all individuals stand upon an equal footing in society, that is to say, have the same rights and the same duties; for which reason social justice is sometimes defined as the law of equal liberty. On the other hand, social rights and still more so social duties, at least such as society judges to be most indispensable, are precisely defined by the laws, as are also the punishments which ensure their observance, but not the rewards which crown their fulfilment, for to these little thought is given. And hence this other definition: social justice is the law itself, or from another point of view the apparatus and the means designed to ensure obedience to the laws.

Let us recapitulate. There is no justice in nature. In the individual and with respect to that individual, a relative justice exists, which is entirely physiological and is the sanction of his acts, the source of his responsibility, the stimulant to his activity. In society a conventional but necessary justice exists, without which all would be anarchy, which is the sanction of the correctness of

the relations of the social body to individuals, and likewise their guarantee.

Nothing, we believe, shows more clearly the profound difference existing between nature, the individual, and society, than the different acceptation in these three cases of the words which we have just examined. We might stop here and conclude directly regarding the questions which were restated at the beginning of the present chapter, but we must first insist upon a few points in the mechanism of the social evolution which we have skimmed in the preceding chapters.

* * *

Society not being a product of nature but a product of man, evolution in it presents differences which have not been sufficiently remarked or insisted upon. At first it is natural, or such as circumstances and the regular play of individualities have made it, or semi-artificial, namely such as the conscious or unconscious will of man has shaped it. It may even be entirely artificial, if it has been built up altogether by man, regularly and methodically interfering with a knowledge of the causes at work and with a well-defined end in view. Social evolution has individuals as its agents, but as its effects a line of permanent results surviving individuals, possessing in some measure an existence of their own, growing, modifying, selecting, and culminating in a majestic *ensemble* independent of man and of the causes which have given it birth.

Let us first look at the agents or initial factors. The first, as in the evolution of all animate beings, is the expansion of life, and in this particular case social life, that is to say, increase of population, of needs, and of faculties. The second is the variability of individuals, giving rise to individual differences or variations.

We shall begin with the latter, and first take up a few physical characters, such as they are exhibited in anthropometry by figures showing the degree of frequency of the variations about a maximum centre, which represents the type of the character in the group studied. We shall borrow the data from our *Éléments d'anthropologie*,¹ condensing them to the limits of necessity.

¹ Pages 338, 442, 536.

The height of 424,215 Italian recruits from 20 to 21 years of age varied according to Pagliani as follows:

| HEIGHT. | RELATIVE FREQUENCY. |
|-------------------------------|---------------------|
| Above 1.80 metres..... | 6 in 1,000. |
| From 1.80 to 1.70 metres..... | 142 in 1,000. |
| From 1.70 to 1.60 metres..... | 528 in 1,000. |
| From 1.60 to 1.50 metres..... | 275 in 1,000. |
| Below 1.50 metres..... | 40 in 1,000. |

In 1,000 Parisian skulls of the masculine sex, the cephalic index, or the ratio of the width of the skull to its length, varied, according to measurements which we ourselves have made, as follows:

| CEPHALIC INDEX. | FREQUENCY. |
|--------------------|----------------|
| Above 85..... | in 87 skulls. |
| From 85 to 80..... | in 268 skulls. |
| From 80 to 75..... | in 429 skulls. |
| From 75 to 70..... | in 206 skulls. |
| From 70 to 65..... | in 10 skulls. |

The weight of 183 masculine European brains from 25 to 35 years varied according to Broca and Bischoff, as follows:

| WEIGHT. | FREQUENCY. |
|-----------------------------|------------|
| 1500 grammes and above..... | 25 brains. |
| 1500 to 1400 grammes..... | 44 brains. |
| 1400 to 1300 grammes..... | 70 brains. |
| 1300 to 1200 grammes..... | 39 brains. |
| 1200 and less grammes..... | 5 brains. |

It follows from this, that in dealing with the variations of a given character we have to distinguish between the variations which are oftenest repeated in a series and which form the mean group, and those which range above and below the mean and decrease in point of frequency, the extremes in both the higher and lower scales of variation being the rarest variations.

The same is true of sensory and psychical characters. Weismann remarks that while some persons are absolutely incapable of distinguishing between two adjacent notes on a piano, Mozart could detect the difference of a fourth of a note between two violin-strings sounded two days apart. In our psychological laboratories individual variations in the duration and intensity of certain reac-

tions are now measured, but for psychical phenomena recourse must be had to descriptive observation.

These variations bear upon the general *ensemble* of the faculties, according as these are more or less felicitously balanced, that is to say, upon cerebral capacity, upon the mode of association of these faculties (which furnishes the most astounding diversity), or upon the quality of some particular faculty. With respect to each one of these points of view a scale may be formed running from zero to a very high maximum. At the bottom are the variations which denote a perfect absence of faculty, and low variations which give evidence of feeble functioning ; the most numerous variations are at the centre ; above we find the ordinary higher variations which steadily decrease in number, and at the top, finally, the rarest variations of all are found,—luminaries of the maximum brilliancy which alone emit more light than the whole series together. And from such a scale are produced innumerable intellectual categories : the incapable, the inert, the insignificant, the nulls, the automata, the impressionable, the incoherent, the ecstatic, the contemplative, the positive, the geniuses, etc.

Take a restricted example—the faculty of observation and induction. In 100 individuals 30 will daily pass by an object or be the witness of a phenomenon without seeing it ; 30 will see it, but will only make it the occasion of a profitless remark or of some trifling conversation ; 20 will distinguish in the object or phenomenon the particular point in which it differs from others ; 10 will reflect a moment or so upon it ; 5 or 6 will immediately induce from it some idea which they will connect with some other thought and store it up in their memory for later use ; 1 or 2 at most will immediately see in it a gleam of light and make it the object of the most felicitous application.

Now the great discoveries,—and this by the way is the first ultimate proposition which I am desirous of establishing,—the great discoveries, I say, the general ideas which wing their way in advance of progress, the things which subsequently give rise to the most useful practical applications, are the product of these higher individual variations. A society restricted to inferior variations

would retrograde. A society having only mean variations, all other things being equal, would be immovable; and whilst the others round about it would move onward in the path of progress, it would remain behind. Every society which has any pretension to holding its own, or which desires to outstrip its rivals, is bound to see that the number of its *élite* individuals is kept constant or increased.

There is more besides. On the one hand the best of the higher adaptations may never come into the environment in which they can be put to use, and may so remain a dead acquirement. On the other hand, the mean or indifferent variations may meet with stimulants which will heighten their efficacy, or with conditions which are suited to their special application, and may so acquire fresh power. In other terms, a physical or an intellectual character derives its real value from the use which is made of it. An individual who in one kind of work amounts to nothing may be strong in one which is fitted to his capacity. Who does not know the infinite diversity of the talents and aptitudes of men! In the intellectual class some demonstrate their rare abilities in the arts, in the sciences, in literature; others in manufacturing and commerce, or in politics. Specialisation here advances far. In the sciences some show an aptitude for mathematics, others for natural history, others for sociology. Even in the same branch aptitudes are different. A person who is given to either botany, geology, or entomology, may be averse to research in the other branches. And even here again there are distinctions. In botany, for example, one person may be good in the description and establishment of species only, another good only in the physiology of plants or in the philosophical problems to which they give rise. A third is interested only in microscopic research or in horticulture. In society the division of labor is infinite; there are all sorts of places for all kinds of activities, for all variations whether high, mean, or low. Long ago Aristotle said that some individuals were born to obey, others to command. In a manufactory where all the employees have the same education, one will never be anything more than a good workman, another a good book-keeper, while a third will be a good foreman, although incapable of being the superintendent. Among the

managers themselves, one is best fitted for selling, another for manufacturing, and another for controlling the establishment generally. In the army it is the same. Some will never be more than common infantrymen, some never more than underofficers; a small number attain the rank of captain; the majority of brigadier-generals never become division-generals; very few have the ability to command an army corps.

In short, there are high and low occupations in society for every one, just as there is an ascending and descending scale of aptitudes among individuals. Yet the two factors, the proper aptitude and the proper place in which to make good use of it, must be made to meet. Each must seek his path in life, essay success in different directions, and if possible find the place where his qualities may be best utilised and his defects entail no drawbacks. The very things that are intolerable defects in one position may be the very best of qualities in another. Nothing can be more rigorously true than the saying, "The right man in the right place."

In society the natural inequality of men loses therefore part of its repellent character. Individuals who are high in the scale for one task are often low in the scale for another. An average individual sometimes renders a greater service in the right place and while performing a work that is much in demand, than an individual high in the scale of capability does by performing a work which is little in demand. It follows that all the efforts of a society desirous of procuring for the mass of its members ready and ample satisfaction of its needs is bound to favor everything which tends to put in the hands of individuals the means of finding out for themselves the best occupation for their faculties, for augmenting their present value, and for realising their special and peculiar happiness.

There is a third reason why society should favor emulation, competition and struggle,—three things which hang together. The activity of an organ, of a function, or of a faculty has the effect of increasing its power and of differentiating it in the direction of the work it is doing. The variations which are most used, and which consequently are most enhanced in the scale during the life of the

individual, are those which have the greatest tendency to repeat themselves in descendants and, if the same exercise is continued, to be confirmed in the general line of descent. A laboring man lifts so many kilogrammes every day, and finally by exercise succeeds in tripling the amount. His son, if he resembles him, and if he works at the same occupation, will attain a higher figure, and will bequeath to his son the predisposition to increase the amount even more. There is evidently a limit, but the muscular force incessantly stimulated in each generation will reach a higher mean than that which would have been attained had the individuals of the series suffered their muscles to be inactive. No hypothesis of Weismann can alter the fact. It is the same with intellectual variations. They will have a higher place in the scale in families which exercise their brain than in those which only exercise their muscles, if the heredity be of the right kind and renders its assistance. It is this that explains the transmission of individual characters acquired by usage or by lack of usage. An indifferent variation, spontaneous in a family, say a special conformation of the ear, the nose, or the chin, some little peculiarity of movement, some peculiar method of thought, will be perpetuated for generations if the chance of marriage alliances operates in the right direction. *A fortiori* when the variation is not indifferent, when it is utilised, augmented by labor, the chances of transmission are greatly increased. The activity which the search for a better employment of the faculties engenders is, therefore, independently of the material products which it yields, the factor *par excellence* which makes for the amelioration of individuals. Every society that has any thought of the morrow, that is bent upon perfecting the species and on rendering the path of life more fruitful to its successors, is bound to respect struggle, if not to encourage it.

We pass to selection in society. Does it take place here among variations which have been utilised just as it does among animals? We know its mechanism in the latter. The strong, possessed of variations which are perfectly adapted to the situation, are perpetuated, while the feeble who possess variations which are imperfectly adapted are eliminated.. The law is the same with man

living in a state of nature, whether alone or as the chief of a family. It is the same with primitive peoples who as yet live only upon game and the fruits of the earth. Those who live in favored regions prosper, while those who are forced into sterile regions, whether very cold or very hot, but without water and without game, vegetate and pass away. Later among barbarians of all stripes, among civilised nations and even in the present day when war intervenes with all its horrors, the same selection by death and the suppression of reproduction continues. The cleverest and best armed nation carries the day. In this way a large number of peoples have disappeared whose names have not even come down to us. And we have had in recent times a forcible instance of the phenomenon in the extermination of the Guaranis and the Tasmanians. The primitive races, of which rather the evidence than the actual line have been continued to our day, have been produced by differentiation and the successive elimination of the poorly adapted at a time when natural selection operated in all its original splendor as it does among animals.

But apart from these cases, and as we go farther away from the primitive phase, selection falls off in intensity and changes its character. The first cause of this is the development of intelligence. According as man learns to protect himself against the elements, and finds means of existing where formerly he perished, artificial selection associates itself with natural selection. What else is agriculture, domestication and rearing of animals, exchange, industry, association and changing of customs, if it is not the intervention of the hand of man modifying his original conditions of existence as he now himself modifies the vegetable and animal species which he desires to perpetuate for his own use and pleasure. A second complementary cause of the falling off of selection in the human species is the facility with which the experience acquired in the art and conduct of life is transmitted from father to child, and from the tribe generally to its component members. In animals this transmission operates only through habits or instincts which require a long time to become established. In man, thanks to his possession of language, and to the prolonged space of time during which he

lives in his youth with his parents, and also to tradition which is constantly adding to its store, this education is rapid.

The most patent result of selection in more or less civilised epochs has been the division of society into classes, the one satisfying both its necessary and its superfluous needs, the other satisfying within the barest limits the first only, but still surviving and reproducing itself. The abyss which separates them does not, nevertheless, prevent them from mingling together, the higher classes appropriating the women of the lower. As to mortality, if misery causes it to be greater in the lower classes, in the higher it is augmented by war which these classes make their profession.

War, to which we may here refer again, also changes the character of selection. In the beginning the vanquished were taken and eaten, then they were made slaves, with their existence, at least, assured. For a long time war was a hand-to-hand conflict; courage and strength were the conditions of success; natural selection took its regular course. But when fire-arms were invented death was dealt at a distance without distinction. Selection was transferred from individuals to nations. To-day the change is even still greater. Military conscription seizes upon the strong and leaves behind the weak, who thus become the favored in life.

Even within classes themselves, struggle has changed its character in civilised societies. Its object for individuals is no longer survival, but a greater or less satisfaction of needs and particularly of superfluous needs—the desire for comfort, riches, and higher positions than those in which they are born—the highest possible in fact. In the last century the serfs, grouped about their lord, no longer struggled; they lived wretchedly, but they still lived. But yesterday our peasants were in the same stage. A majority of the proletarians aspire for nothing but slight improvement. In our days any individual having the least disposition to work and to save, can always sooner or later procure a relative competency. Struggle assumes considerable proportions only in the higher classes where there is an unusual need of superfluous pleasures or unbounded ambition. And even in these conditions death is rarely the consequence of failure. What is left of natural selection is a

minimum. Huxley estimates that the social stratum in which it is still operating is represented in England by scarcely five per cent. of the population.

This change in the consequences of struggle, which is now nothing more than normal emulation and simple competition, is in itself a sufficient answer to those who would eradicate it on the grounds of fraternity. The only thing of moment is so to regulate its operations as to prevent it from ever reverting to what it was in primitive societies and among animals. To-day society takes care of its idiots, its cripples, and its orphans; it has asylums of all kinds, and homes and retreats for the aged. Medicine allied with hygiene has almost doubled human longevity. Statistics have shown that the birth-rate is greater among the poor than among the rich, and greater in the country than in the cities, whatever the causes for it may be. Darwin himself admitted that civilisation was opposed in many ways to the free action of natural selection. The truth is that it has been replaced by an unconscious artificial selection which has other effects.

Has this change any connexion with the curious and paradoxical proposition which has been set up, that the average intelligence of man has not increased in modern civilisation as much as might be expected, and that between us and the Greeks of Pericles, as Gladstone and Galton say, and between us and the men described by Shakespeare in the time of Elizabeth (Huxley), the difference is not striking. If we took into account the population, the number of illustrious names belonging to the civil life which antiquity has transmitted to us would be even greater. But there is a distinction to be made. Certainly the Homers, Sophocles, and Aristophanes, the Socrates, Aristotles, and Platos, the Demosthenes, the Phidiases, and Appelles are more numerous and have not been surpassed by the poets, artists, and philosophers of our days. But the Archimedes and the scientists are rare and obscure. And there is no cause for astonishment at this. In the first place a career in letters and in the arts, that is, of thought and of imagination, was easy then, while in the sciences it was difficult. In the second place, literature and the arts are subjective products inher-

ent in individuals, in their experience, in their *a priori* reason, while the sciences are objective products requiring anterior preparation and long series of observations, and demanding the exercise of reason *a posteriori*. I admit that Hippocrates and Galen, and in more recent times Sydenham, if they had possessed the anatomical and biological knowledge of our day, might have equalled our present medical celebrities. I believe that Aristotle as a naturalist, or, taking a man nearer to our time, Descartes, would in the position of Pasteur have been led to the same discoveries. But this cannot be proved, and as a matter of fact it is the average type that must be considered and not the higher individual variations which are met with in all times and in all races. In literature and in the arts one can be a genius in any epoch. In the sciences it is impossible; one depends upon one's predecessors; one can apply only what others have gathered or prepared for him. The proposition in question, therefore, cannot be accepted without a more profound examination than has been given to it by such authors as Kidd, for example. Having no object in view but the establishment of the truth, I have several considerations to advance in its favor, considerations which have long been patent to me.

Intelligence is the product of several anatomical factors, among which the most accessible to comparison is the volume of the brain and when that is lacking, the volume of the cranial cavity which holds it. The brain is extremely rudimentary in the most ancient mammals. It increases in size as we go down the ages, notably so among the primates. In passing from the anthropoids to man, its weight is increased threefold almost, at a single bound,— a fact which renders the volume of the brain the cardinal anatomical characteristic of man. In the human species itself pronounced average differences are found among the great principal races. In the Java and Neanderthal race, the first which is known to us, the cranial capacity is 1,000 centimetres at most. The negroes of Africa have on an average in round numbers about 1,400 centimetres, the negroes of Oceanica 1,450, the yellow races 1,500, and the whites 1,550. (Cubical measurements made by the process of Broca.) These differences may be explained by the selection which

has operated among men in the state of nature, and which has differentiated these races. There are even in the black and yellow groups mean deviations which are also explained by selection. Among the white races it is different; the average deviations are feeble and not what the Darwinian theory would require. Between the races of the Neolithic and the Bronze ages and modern Parisians; between the Parisians of the twelfth and the nineteenth centuries; between the Egyptians of the fourth and the eighteenth dynasty, there is no notable difference. However, the second anatomical factor of intelligence, the development of convolutions in the brain, may have replaced in a measure the increase of volume; but this factor does not lend itself to a comparison of averages. Everything else being equal, a highly endowed intellectual individual may have fine, close, and numerous convolutions with a small brain. For instance, Gambetta. In fine, the question is still an open one; on one side the disappearance of selection explains the existence to-day of a less average degree of individual intelligence than should be expected; on the other the activity of the brain which continues undiminished must tend to increase either the volume of the brain or its convolutions.

Selection in our present societies still operates, but in a different form, and without causing the elimination of the less fit by death. The impulsion, revealed by anthropology, which urges large classes of individuals into the same path of life, is among the number. The following is an example. We know that the Anglo-Saxons and Scandinavians have as a pronounced physiological character their spirit of initiative and of emigration, and as a prominent physical character their high stature. Now, I have shown¹ by the aid of the statistics of Gould, taken during the war of secession, that if the corresponding series in the United States and in Europe be compared, the height is always greater in the United States. Further, if we make the same comparison between corresponding series in the East and in the West of the United States,

¹ P. Topinard, *Eléments d'anthropologie générale*, p. 452, etc. Paris, 1885. Publisher, Vigot frères.

the stature will be found to be greater in the West. Consequently, setting aside the influence of a change of life and of environment for reasons which I cannot stop to give, the conclusion is evident that the majority of Anglo-Saxons have in their physical and physiological characters been twice subjected to selection: first in emigrating from Europe to the United States; and then again from the East to the West. It is by some such process that certain industrial cities attract the brachycephalic population of the country, and others the dolichocephalic. Marriage operates the same as selection, varying with the country. The professions also exercise a selection of this kind. We have spoken above of military selection. The hospitals also have a selective influence, the mean weight of the brain is here much less than in individuals taken from the enlightened classes.

To sum up, the evolution of societies takes place through the agency of individuals whose activity, being hyper-stimulated by competition, accentuates and develops variations in the direction of the best adaptation to the conditions. It is selection, if you will so have it, but selection by work and not by death.

What is now to be considered are the external products of that activity,—some immediately consumed by the individuals, and others persisting after them, accumulating, reacting upon one another, arranging themselves in groups, and giving rise in their *ensemble* to that marvellously progressive movement which is called civilisation, a movement which was already well pronounced in Græco-Roman antiquity, which then came to a standstill, began again scarcely four hundred years ago, gradually quickened its velocity, and has taken on in the last forty years so great an intensity and momentum that those who have been able to follow it as we have done, are stricken dumb with astonishment, and ask to what it will come, even in the period which is immediately before us.

The evolution of men, with which anthropology is concerned, must not, as we have said, be confounded with the evolution of societies, which is properly the subject-matter of sociology. The one leads to the other, it is true, as the cause to the result: the “cause” being the individuals which succeed each other and die, the

“result” their works which remain after them. These last we have traced and described in the preceding chapters, in speaking of the family, of social forms, of manners, of institutions, of religion, of sciences and philosophy. They are of every class,—physical, intellectual, and moral. They are handed down by language, example, habits, laws, traditions, songs, writing, and printing, and by the objects collected in our museums of art, ethnography, etc. To trace their evolution, to describe how they have followed one another and how they are interrelated, would be to write the detailed history of every branch of knowledge, of every profession, of every industry, of every science, beginning with history, so called, its controlling ideas, general and particular. The broad survey which we have attempted is insufficient. It is in the details that the bonds of connexion are clearly seen. Take, for instance, medicine. To sketch its history even in broadest outlines, one would have to show Hippocrates, collecting his first observations in the art of healing, and attaching memoranda of them to the columns of the temple ; the physicians of antiquity dissecting monkeys in order to study the anatomy of man ; the latter science arising in the Middle Ages with Mundinus and later with Vesalius ; physiology following with Harvey ; histology and the many remaining branches not making their appearance until the present century ; every new acquisition being the result of others which precede it, each coming in logical order and at its right time. Weismann has written a beautiful chapter on this subject, taking music as his example. He has emphasised how necessary it is to separate individuals from their products, which have their evolution apart. He has separated what I should call musical art from musical science or technique, springing from a few notes constantly repeated, and rising step by step to the highest forms of symphony. But the really most beautiful example, perhaps, of this secular accumulation of the works of billions of individuals who have now disappeared, is undoubtedly the edifice represented by our legislative, administrative, and financial organisation, as it stands to-day. Imperfect, as it may seem to us, and constructed fragment by fragment, retouched, retrimmed, altered, co-ordinated, it is still an

admirable creation. Our laws in France are made up of the Franco-German law, the Roman law, the canon-law of the Church and the successive additions of kings, parliaments, provincial and general estates. In the Revolution they were overhauled and broadened to suit with the reigning ideas of individualism. With Napoleon I. they were overhauled again and made to conform to the prevailing notions of centralisation. Since then they have never ceased being re-elaborated ; to-day there is not a minister nor parliament who is not desirous of leaving upon them the imprint of his existence, either by overturning them or improving them.

Every society has contributed to the erection of edifices of this kind. Whatever it has added of its own constitutes its particular patrimony which it transmits enlarged to posterity. Nevertheless, it is distinctive of these social acquisitions, to spread without losing their value, to infiltrate themselves in all directions, and so to become the common patrimony of all civilised mankind. From this treasure, which was very small in the time of the Chaldeans and Egyptians, which was much larger in the time of the Greeks and Romans, and which has been prodigiously augmented in our epoch, all derive profit. Every one draws from it in proportion to its magnitude at the time in which he lives. A splendidly endowed individual might do without it, in the strictest sense, but it would be renouncing his relative chances of success ; he would be in the situation of a man in the state of nature. The poorly-endowed individual, on the contrary, who drew largely from it, could arrive at the best results. It might almost be said that in the struggle for existence the treasure amassed by predecessors is worth perhaps even more than personal qualities. Thus, a person starting out in life, and having aspirations in a certain profession, finds ready what his predecessors have learned and perfected in that profession, and what has cost long centuries and entire lives to accomplish. In a shorter or longer time he will be conversant with what is known and will not have to begin *ab ovo*. He enters upon his path at the place where it was left by his predecessors ; he has nothing to do but to march on and to extend it, till the day when he in his turn will leave it to his successors.

The marvellous spectacle which the present age offers is therefore not proof of an average intelligence far transcending that of our predecessors, but the result of accumulated capital yielding dividends which constantly grow greater. This is the great economic law which we find in social evolution, just as we do in all things, and which our socialists refuse to understand. The power of the individual of our day has been increased a hundred fold in comparison with the individual of times past who did not have this capital at his disposal. Thus the principal object of the system of life in society is attained,—the multiplication of the powers of man, and that not because union makes strength, but because each profits from the capital which his predecessors have left him and so is enabled to produce more. It must be admitted, however, in justice to all the facts, that never did the individual display more activity than now, and that never were larger numbers engaged from all classes. So also the characteristics of our end of the century is in all branches of thought as well as practice an over-production, not because intellectual capabilities are greater but because the struggle has its full effect, because the higher individual variations are less wasted and the average variations better find their place, and so, let us say again, because the capital which we have inherited is immense.

We may now conclude, and shall give in a last article our practical solution of the problem.

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